Potlatch

Intra Company Memo

To: T. Maddock

Date: September 29, 1977

From: R. Cox
Location: Lewiston

Subject: Trip Report - 9/20-21 White Pine Blister Rust Control History Review Meeting.

The meeting was held to assist Warren V. Benedict (retired BRC administrator) who has been commissioned by the Chief, USFS, to write the history of BRC for the United States. Eighteen people were present, mostly old-time "blister rusters." Lee White, Roger Billings and I were the only industry representatives. Both Lee and Roger were involved in BRC before joining private industry--Lee as a long-time BRC supervisor under the old Bureau of Plant Quarantine and Roger as a N.F. Supervisor. Homer Hartman, former BRC supervisor fot the St. Joe area, invited me to attend because of my personal interest in BRC since the early 1940's and the fact that Potlatch was a major cooperator in working with BRC people to coordinate our harvesting operations with the most auspicious follow-up of ribes eradication. Also, Ed Rettig instigated a special $.02 per acre extra assessment through the protective associations to suppliment the program on state and private lands; this was later increased to $.03 per acre.

On Tuesday, Sept. 20, we met at the USFS, Forestry Sciences Lab at Moscow, to discuss the history of BRC in Idaho from the time of early research in the 1920's to abandonment of the program in 1966. On Wednesday we inspected two natural reproduction areas resulting from early logging and one plantation between Bovill and Clarkia.

Warren Benedict said he would send me a copy of his report when published, but since this will probably require several years, I thought I should brief the highlights of the meeting because of the importance of BRC to Potlatch's Idaho operations. I've included a background resume' of the history of the introduction of blister rust and the nature of the disease as a "refresher" for those interested.

Control Efforts

Early control efforts consisted of hand eradication of the alternate host plants, wild gooseberries and currants. (Ribes species.) This was followed by spraying of the shrubs with hormone-type chemicals (2,4-D - 5-T). The latest work consisted of treating individual trees with antibiotics; Actdione, applied as a basal stem spray directly to the canker, and phytoactin was applied as a foliar spray by ground and helicopter. After over 40 years of effort and the expenditure of some $50 million, the program was eventually abandoned for several reasons:

Intensive surveys in the early 1960's indicated that the degree of infection in treated stands reached nearly the same levels after a period of 15-20 years as in untreated stands. This apparently was caused by either a much longer distance spread of the fungus spores from ribes to pine than originally believed, or infection occurred from the small numbers of plants inevitably missed in the control areas. Cost of treatment also entered into the decision--up to $100 per acre in later years of the program.

What did the Direct Control Program accomplish?

The concensus of the group was that BRC, eventhough rated a "failure" at the time had:

(1) Bought some time by delaying severe stand mortality for 10-15 years. This was especially evident during our on-the-ground inspection Wednesday. Stands now 40-50 years of age or older have many pines which have grown to merchantable size, and are now salvagable through commercial thinning. Also, many of the trees given the basal stem treatment of Actdione spray still have old canker scars which are healing with no visual evidence of infection, so apparently this treatment did prolong tree life in many cases. It can be argued that these trees have natural resistance, but judging from the size of the canker scars, many were lethally infected before treatment.

(2) The blister rust crews provided excellent fire suppression back-up and significantly contributed to the reduction of fire losses. Homer Hartman estimated that there were up to 12,000 men in the North Idaho blister rust camps at the peak of the program. The protective associations cooperated in utilizing these people for fire suppression.

(3) The program helped many young men obtain practical experience and money for advanced education. Many forestry students got their start in blister rust control work. (Even I did--in a camp west of Priest Lake in about 1937.)

(4) The direct control program helped point out the need and set the stage for the development of resistant strains.

As warren Benedict said, "Although we lost the war, we fought a good fight and won a few battles."

Recent Developments

1. Resistance breeding: Since direct control was abandoned in 1966, efforts have been concentrated on breeding for progeny of rust-resistant strains of white pine found growing naturally in N. Idaho. Some of these trees are on P.C. lands, and we've cooperated for many years in helping select trees and making them available

to F.S. researchers. According to Ray Hoff (Forest Geneticist, USFS Forestry Sciences Lab, Moscow) and Dick Bingham (retired leader of the resistance breeding program), this effort has produced good results. The second generation of seedlings are demonstrating an encouraging carry-over of rust resistance. The production of rust resistant seedlings for planting on national forest lands is being expanded. Also, Ray told me that Potlatch has obtained several pounds of resistant-strain seed from the Moscow seed orchard in exchange for Roger Blair and crew's help in picking cones, etc. That's good news! (Better news--G. Ringold just told me we've also acquired a substantial supply of naturally-selected seed.)

2. Natural selection: Several years ago a cooperative program was launched to develop resistant progeny through natural selection in stands without going through the laboratory-seed orchard breeding process. This is accomplished by reserving resistant white pines as a seed source at the time of logging. Ray Hoff said the maximum stand mortality they have found to date is about 93%. The 7% of the trees show resistance from partial to virtually complete. Our foresters are cooperating in natural selection studies, e.g. Canal Gulch near Pierce.

   I asked Ray if a combination of natural selection and the resistance breeding program could eventually bring western white pine back as a significant species. He said, "definitely." I asked how long this would take. He said that the genetic breeding requires 15-30 years, whereas natural selection would take much longer. He thought perhaps 100 years or more would be required to redevelop white pine as a major commercial species, but Dick Bingham thought he was too pessimistic.

3. Timber marking guides: One item of special importance is that Ray Hoff and staff have developed timber marking guides which, I understand, our foresters are now using. These are easily applied visual guides based on crown condition, e.g. color and vigor; they provide a practical suppliment to our long-standing timber marking rule prescribing the reserving of vigorous white pines with few or no blister rust cankers as a seed source in harvest cuttings. Hoff's guides should also be applied in commercial and pre-commercial thinnings. (We are, re. G.B.R.)

Conclusion

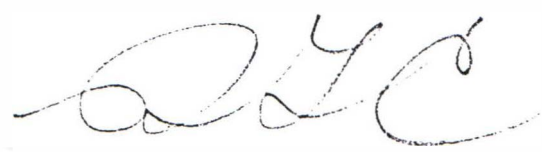
I came away from the 2-day meeting with renewed optimism about the future for white pine in our management program. It is still one of our best species, having excellent growth and utility characteristics and is one of the easiest to manage silviculturally--with the exception of blister rust, of course. The mountain pine beetle is primarily a problem in overmature stands and can be controlled through more intensive management in our more vigorous young stands. I am pleased to know that our forestry department is still maintaining excellent communication

with the blister rust control research people at Moscow. Also, Roger Blair has co-op genetic studies in progress with universities and industry.

I have a strong feeling that white pine will certainly not become extinct and that through an intensive, cooperative program it can be restored as a highly valuable component in our "future forest." A large seed orchard program would require large long-term capital investments, but it might be justifiable. A natural selection program would require little additional expense, but would be much slower. Irecommend that we incorporate both in our long-term program.

Roger says he has proposed a genetic breeding program via the seed orchard process, but it has not yet been approved. I suggest we have a meeting of our principles with Roger Blair and Jim McNutt to review Roger's proposal which I believe has much merit.

Perhaps this subject doesn't come under my "environmental" purview, but I'm still deeply interested in the future of white pine because it is one of my "first loves." Also, if an expanded P.C. program is approved, it would have considerable public relations value.



RGC:me
Att.
cc: J. Gruenfeld
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October 7, 1977

Mr. Warren V. Benedict
5311 Sangamore Road
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Dear Benny:

I thought the attached report on our Blister Rust Control History Review Meeting might interest you. If you find any errors, I would appreciate your pointing them out to me.

I did not mean to disparage your efforts when I said that publishing your report "will probably require several years." I know you will have your report completed in due course, but sometimes quite a while is required before it is formally published.

Best wishes on your project. I really enjoyed the meeting, and appreciate Hart's inviting me.

Sincerely,

Royce G. Cox

Royce G. Cox

RGC:me
Att.
cc: H. Hartman
L. White
R. Billings
C. Wellner
R. Bingham
R. Hoff ✓

Note to cc recipients: I will also appreciate your calling my attention to any errors.

R.G.C.